

National Report of Kenya (2011)

NOVEMBER 2011

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INFORMATION ON FISHERIES, RESEARCH AND STATISTICS

ANNUAL FISHERIES INFORMATION

In accordance with IOTC Resolution 10/02, scientific data was provided to the IOTC by 30 June [Current Year] for all fleets other than longline.	[answer YES or NO] – [add date provided to the Secretariat]
Longline data was provided on 30 Dec [Previous Year] for final data from longline fleets operating in the high seas, and 30 June [Current Year] for provisional data.	[answer YES or NO] – [add date provided to the Secretariat]
During the year, the Kenyan flagged longliner was a victim of Somali pirates and consequently moved to the Atlantic Ocean.	

ABSTRACT/SUMMARY

Tuna fisheries in Kenya continue to play an important role in the socio-economic development of the country. Artisanal landings of 180 tons of tuna were realised in 2010 while a local longliner landed 137 tons. Recreational big- game fishing for tuna and billfishes landed 60 tons. The artisanal fleet structure remains multi-gear fleet of locally made crafts of varied capacities. Regarding tuna fisheries governance, Kenya is implementing port sampling, improving artisanal fisheries data collection system and playing an active part in implementing the national sea turtle conservation strategy.

BACKGROUND/GENERAL FISHERY INFORMATION

The Kenyan coastline stretches from Vanga at the Tanzanian border to Kiunga on the Somali border (Figure 1). The coastline is 640 Km long, the territorial sea and adjacent Exclusive Economic Zone (EEZ) measures some 152,100 Km². Rich inshore marine fishing grounds are found in and around Lamu Archipelago, Ungwana Bay, North Kenya Bank, and Malindi Bank (Figure 1). This area is where the south flowing Somali Current meets the north flowing East African Current during the Northeast Monsoon season (November to March) causing upwelling and enrichment. The various marine environments in place include a fringing coral reefs extending all along the coastline with a few breaks where the two major rivers i.e. River Tana and Athi drain into the ocean. The others are mangrove areas, sandy shores, mudflats and rocky shores. The continental shelf drops drastically in such areas as Malindi while in others like Lamu, the increase is gradual.

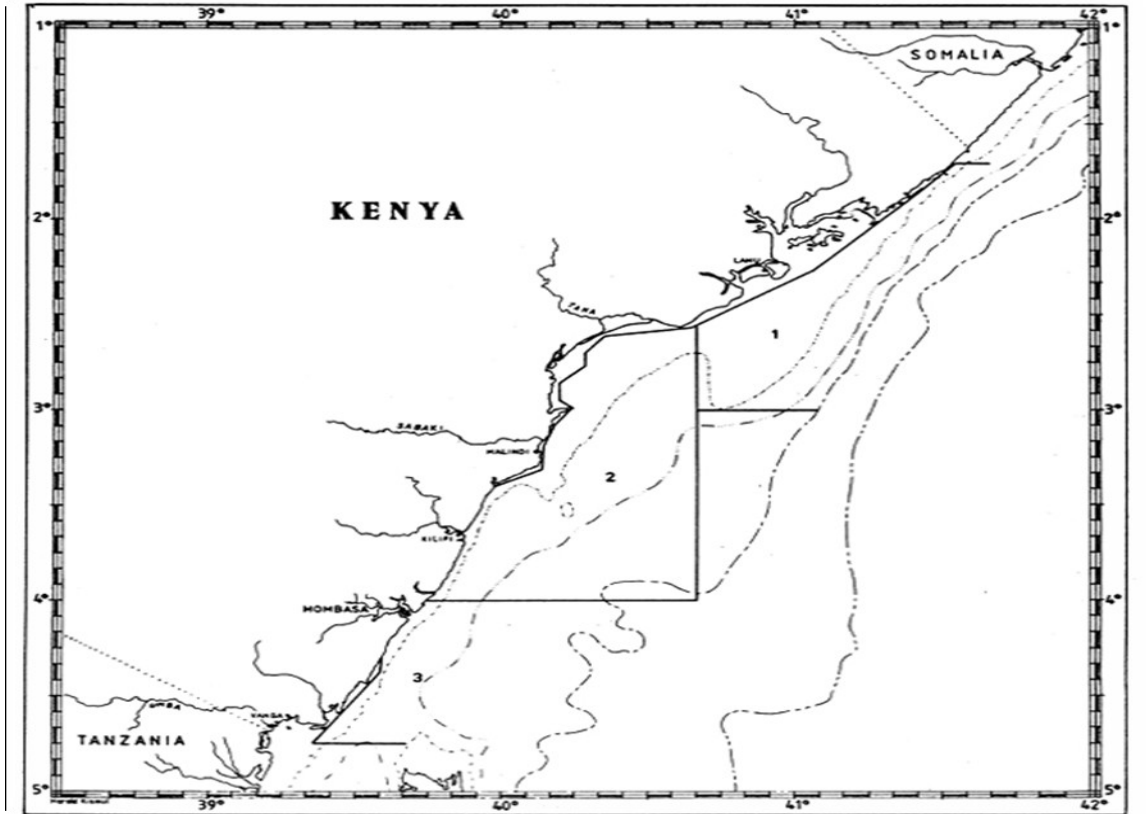


Figure 1: Kenya coastal marine environment showing major artisanal fishing areas

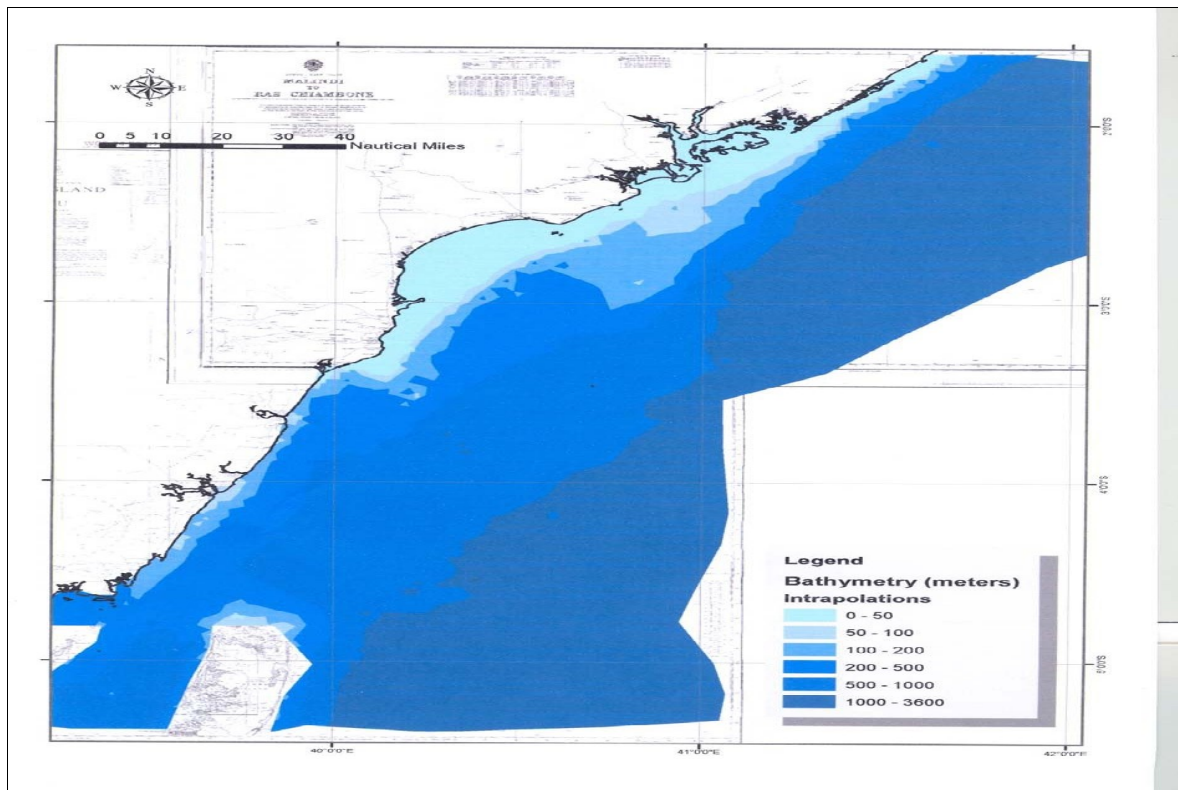


Figure 2: The bathymetric profiles in the Kenya's territorial waters

Most of the fish population consists of pelagic, coral reef species and the demersals. The most productive fishing areas are on the north coast in the Lamu area including Kiunga, Kizingitini and Faza, at Malindi and Tana River delta, and on the south coast around Majoreini and Vanga. Consequently, fishing activities are concentrated along this inshore areas fished by small-scale fishermen operating small non-mechanised crafts and few mechanised commercial trawl fishers targeting shallow water shrimps.

Marine artisanal catches have oscillated between 7,000 and 8,000 metric tons annually for the last decade. Currently, the annual 2010 marine fish landings from artisanal fisheries are 8,406 tons. Artisanal fishing effort consists of multiple gears and crafts of different capacities with varied methods of operation. There are two discernible fishing seasons congruent with the Indian Ocean monsoon seasons. The calm NE monsoon sets in active fishing by most of fishermen while the rough SE monsoon season results in little fishing with most fishermen opting out of the fishery or alternatively restricted in the inshore sheltered creeks and bays.

Kenya fishery targeting tuna and tuna like species is exploited by artisanal, sports-fishing, and Industrial longlining. The recreational fishery in Kenya is dominated by the Big game fishing that mostly targets the Billfishes. Alongside these, three species of tuna (Yellowfin, Bigeye and Skipjack) are increasingly important species targeted.. Apart from the Kenyan flagged Longliners, foreign EU purse seiners also licensed to fish in the Kenyan EEZ

FLEET STRUCTURE

Artisanal fishing activities are undertaken by 12, 077, operating about 2,687boats (2008 Frame Survey). The most common fishing methods used are gillnets, traditional traps, seine nets, long line hooks, hook and line and others. Fishing in the territorial waters is carried out by 6 trawlers mainly trawling for shrimps. In the EEZ waters, 34 purse seiners were licensed to fish in the Kenyan EEZ. During the year 2010, one Kenyan flagged long liners operated in the IOTC area of competence for two months before a hijacking incident. The vessel has since moved the Atlantic Ocean.

The artisanal fleet was composed of different vessel types with two being the main target for tuna. These are the outrigger vessels and Dhows. The main gears targeting tuna were Handlines, Longlines, Trolling lines, Monofilament nets and Gillnets. The composition of these vessels and gears is as tabulated below

Table 1: of vessels operating in the IOTC area of competence, by gear type and size, for the history of the fleet.

Vessels & Gears/Year	2004	2006	2008
Dhows	383	470	629
Outrigger boats	136	154	195
Gillnets	3,917	3,336	2,150
Longline hooks	10,908	8,224	9,009
Handlines	5,682	6,540	4,132
Trolling line	608	500	625
Monofilament nets	902	1,050	1,472

TUNA CATCHES BY SPECIES IN TONS

a. Artisanal

Table 1 summarises aggregate catches per species group(s) of the main tuna and tuna like species targeted by Kenya's artisanal fisherfolk. Owing to the species identification problems and the usage of diverse gear types, the records are not disaggregated per species and gear type. The data collection system has not been separating the catch as per the gear. This will however change after the new data collection system through sampling starts.

Table 2: Annual catch (tons) by gear and effort estimates by gear and primary species, for the IOTC area of competence from 2005 to 2010.

Species/Year	2005	2006	2007	2008	2009	2010
<i>Sailfish</i>	111	148	84	105	160	165
<i>Kingfish</i>	110	82	117	77	75	119
<i>Tuna</i>	336	233	204	319	295	180
<i>Sharks & Rays</i>	253	189	174	183	232	274
<i>Others NEI</i>	6,009	6,303	7,309	8,051	7,164	7,668

b. Industrial longliner

The Kenyan flagged long liner was a victim of Somali piracy menace in the month of March 2010 and as such this report only highlights catches for the two months.

Table 3: Table 3: Comparison between the 2007- 2010 longline catches

Catches in tons	2007	2008	2009	2010****
Swordfish	210	277	288	73
Bigeye tuna	17	23	9	26
Yellowfin tuna	11	22	17	28
Sharks	205	71	44	10
Others	2	18	1	0.08
Total	445	411	359	137.08

*** Headed and gutted weights for two months fishing in the year 2010

c. Recreational Fishery

Most of the recreational fishery in Kenya is by the Big game fishery mostly targeting billfishes, Tuna and other small pelagic species such as barracuda, half beaks etc. Table 4 summarises important tuna and bilfish landings from recreational fisheries in Kenya for the years 2009 and 2010.

Table 4: Summary statistics for tropical tuna, neritic tuna and billfishes from recreational fisheries

a. Tropical tuna	2009	2010
Species	Kgs	Kgs
Yellowfin Tuna	18,144	10,400
Bigeye Tuna	29	4
Skipjack Tuna	769	718
Longtail Tuna	3,329	16
b. Neritic Tuna		
kawa kawa		830
Frigates		215
c. Billfishes		
Sailfish		28502
Blue marlin		17645
Black Marlin		948
Striped marlin		1401

d. Licensed Purse seiners in Kenyan EEZ

In accordance with the provision of the Fisheries Act and in conformity with the United Nations Convention on the Law of the Sea (UNCLOS), Kenya grants fishing access to foreign fishing vessels by issuance of annual fishing licenses. The license is issued to applicants conditional to adherence to provisions of the **Fisheries Act (CAP 378)** and any other subsidiary regulations. The Kenyan EEZ has been fished by Longline vessels and purse seine vessels. Due to piracy problems off the coast of Somalia no applications have been recieved from longliners since 2007. The figure below shows the number of licensed vessels per flag state for the year 2011.

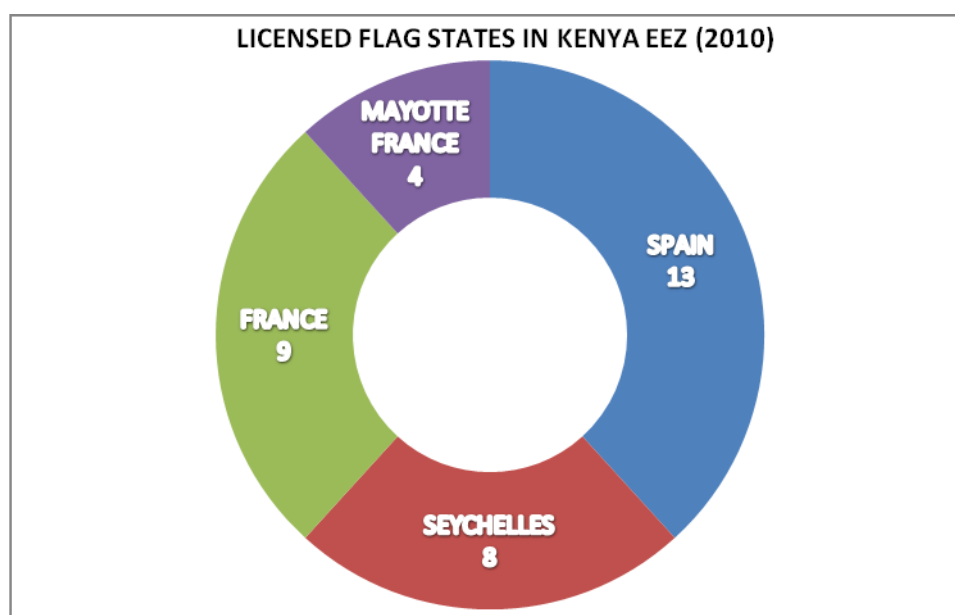


Figure 3: 2010 Licensed foreign fishing purse seine vessels in the Kenyan EEZ per flag states.
ECOSYSTEM AND BYCATCH ISSUES

Sharks

The shark catches from the Kenyan longliner are only separated for two species, the Mako and Blue sharks. The rest are reported as other sharks. The catches for the past four years are tabulated below.

Table 5: Total number of sharks, by species, retained by the longliner in the IOTC area of competence from 2007 to 2010

YEAR	MAKO SHARKS	BLUE SHARKS	OTHER SHARKS
2007	2,035	2,427	200,538
2008	3,354	4,408	63,238
2009	6,093	3,514	34,393
2010	327	695	0

Turtles

The government completed the development of the national conservation strategy and action plan for sea turtles 2010- 2014. The implementation involves multiple agencies. The strategy is very comprehensive with the aim of reducing and mitigating threats reverse declining sea turtle populations and enhance ecological, social, and cultural benefits of sea turtles.

NATIONAL DATA COLLECTION AND PROCESSING SYSTEMS

a. Logbook data collection

Logbook data collection in the country has been going on for the past three years since 2007. Logbook verification was started this year after the Vessel monitoring System was installed. However, the vessel that was being tracked was hijacked by the pirates thereby impacting on the operation. The monitoring of the other longliner was really difficult and culminated with the vessel changing its flag status.

b. Vessel Monitoring System

Vessel Monitoring System commenced this year and is currently operational.

c. Scientific Observer programme

Scientific Observer programme has only been carried out only in the shrimp trawling vessels since 2002. The coverage of the longliners has not yet been undertaken so far, mainly due to the piracy threat.

d. Port sampling programme

Port sampling programme has been going on since 2008. The number of vessels calling to port has drastically reduced with only five purse seiners coming to port in the year 2010. All reefer vessels and containers were sampled and inspected.

E. TUNA LANDINGS AT THE CANNERY

For the third year in row, the deliveries at the at the cannery were by by purse seiners. The rest was either by reefer vessels or by containers as tabulated below.

Table 6 Quantity and Mode of delivery of tuna at the mombasa based cannery 2010

Type of Delivery	Quantity in tons
Purse Seiner	4,668
Reefer (Indian Ocean)	3,701
Reefer Atlantic Ocean	0
Container	1,966
Total	10,335

There was a slight increase in the quantities of tuna deliveries for the year 2010 but substantially below the historical averages and installed capacity of the local tuna cannery. This is due to the problem of Somali piracy. The table 7 shows the a five year trend in quantities of tuna delivered at the local cannery

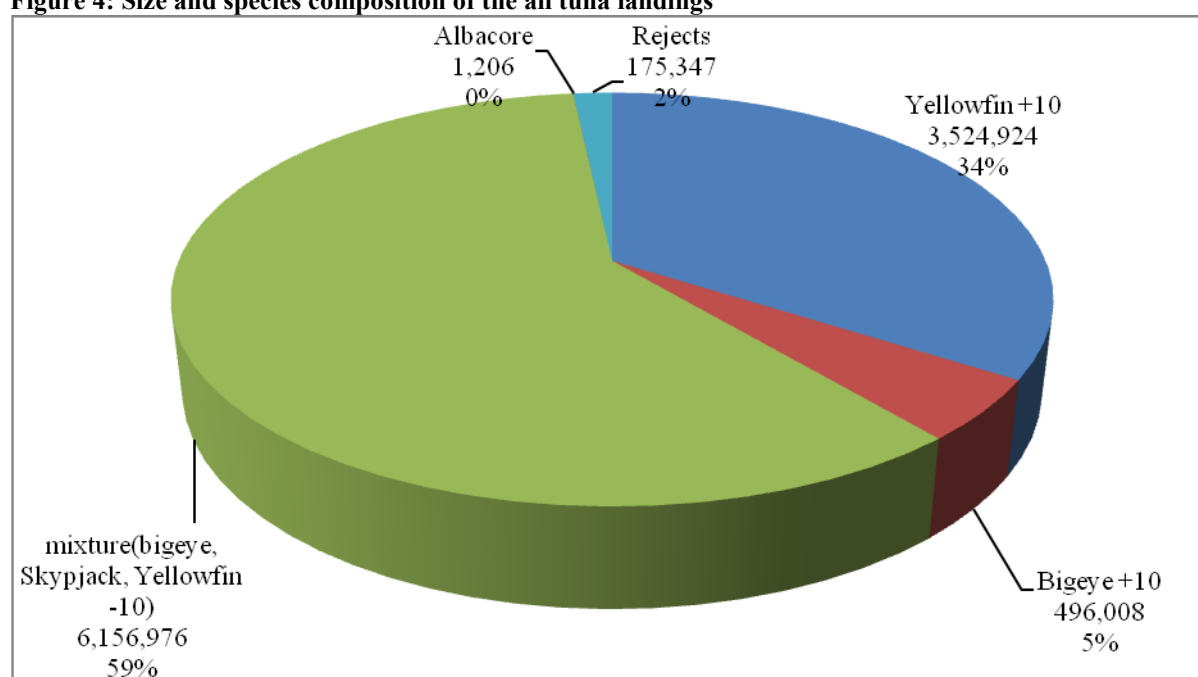
Table 7: Tuna deliveries at the cannery for the past five years

YEAR	'000 TONS
2006	23.5
2007	17.4
2008	16.0
2009	7.2
2010	10.3

Fish landing composition

The disaggregated landings at the cannery were mainly composed of a mixture of bigeye, yellowfin and skipjack -10 (59%) while yellowfin +10 Kgs were 34% of the total deliveries. The overall species/size composition is shown in the figure below.

Figure 4: Size and species composition of the all tuna landings



PROGRESS OF NATIONAL RESEARCH PROGRAM UNDER SWIOFP FISHERIES PROJECT IN KENYA

The South West Indian Ocean Project (SWIOFP) is a World Bank – Global Environmental Facility (GEF) initiative whose objective is to promote environmentally sustainable use of fisheries resources of the South West Indian Ocean coastal riparian countries. These are Kenya, Tanzania, Mozambique, South Africa, Madagascar, Comoros, France (Reunion), Mauritius and Seychelles. The focus of the project is offshore ocean fisheries resources in the Exclusive Economic Zones of the participating countries.

The research activities undertaken and on-going in the six (6) project components are as follows:

Component 1: Data Gap Analysis, Data Archiving and Information Technology;

- The project has established a regional data management system, which is based at Kenya Marine and Fisheries Research Institute (KMFRI);.
- The Kenya historical or past fisheries statistical datasets have been entered and continually updated;
- SWIOFP research surveys on Crustacean fisheries in Kenya(on-going);
- A data atlas of historic data describing offshore fisheries of the WIO will be developed (not done).

Component 2: Assessment and sustainable utilization of crustaceans;

- Stock assessment of shallow and deep water crustaceans and their fisheries (on-going)
- Two SWIOFP shallow water prawn surveys in Ungwana Bay were undertaken ;

Component 3: Assessment and sustainable utilization of demersal fishes (excluding crustaceans);

The sailing orders were completed in July 2011 to undertake the survey. The survey is yet to be undertaken due to unforeseen circumstances

Component 4: Assessment and sustainable utilization of pelagic fisheries;

Fish Aggregating Devices (FADs) have already been delivered in Kenya and will be deployed once SWIOFP finalizes the contract with the consultant to undertake the work.

Component 5: Mainstreaming biodiversity in national and regional fisheries management;

Three biodiversity hotspots were chosen in Kenya for study. These are

- Kiunga for turtles,
- Ungwana Bay for impacts of prawn fishing on biodiversity and;
- Shimoni-Vanga area for marine mammals;.

Analyses based on the two crustacean trawl surveys in Ungwana bay are ongoing

Component 6: Strengthening regional and national fisheries management (Table 1).

Institutional capacity building by training of fisheries managers in formulation of management plans using the EAF approach is on-going

Other trainings for Institutional Capacity Building are;

- Fisheries stock assessment
- Statistical Data and information archiving, Geo-network and Indicators
- Diving and Safety at Sea
- Onboard Research Vessel Training
- Fisheries Observer Training

Table 1: Summary of Man-power capacity Building in Kenya through SWIOFP

Type of Training	Duration	Scientist Trained	No. technician Trained	Total Trained
Fisheries Stock Assessment	Short term	11	0	11
Genetic Analysis	Short term	0	0	0
GIS	Short term	0	0	0
Statistic Data, information Archieving	Short term	4	4	8
Diving and safety at sea	Short term	3	0	3
Msc	Long term	8	0	8
Fisheries Observer Training	Short Term	1	4	5
On-board research training	Short term	3	1	4
Website and Information Management	Short term	1	2	3
TOTAL		31	11	42